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ABSTRACT

This guide for a workshop offered in Queensland, Australia on resource-based teaching and learning strategies for flexible delivery of curriculum lists workshop objectives and program topics and provides background on the presenters. The following program topics are then discussed in more detail: (1) definitions, requirements, and advantages of resource-based teaching and learning; (2) flexible delivery in a business setting, within the classroom, or through individual study; (3) the impact of competency-based training curriculum on the teaching process; (4) competencies for information users; (5) information retrieval and research skills; (6) planning for resource-based teaching and learning; and (7) top level structure, i.e., a strategy for identification of the structures that an author has used in constructing a text so the learner can decompose the information. Supplemental materials include worksheets for various information retrieval activities, a chart of key competency strand/performance level, a diagram of Bloom and Krathwohl taxonomies of cognitive processes, a table of application of Bloom's Taxonomy of Cognitive Processes, and a checklist for planning library assignments. (ALF)

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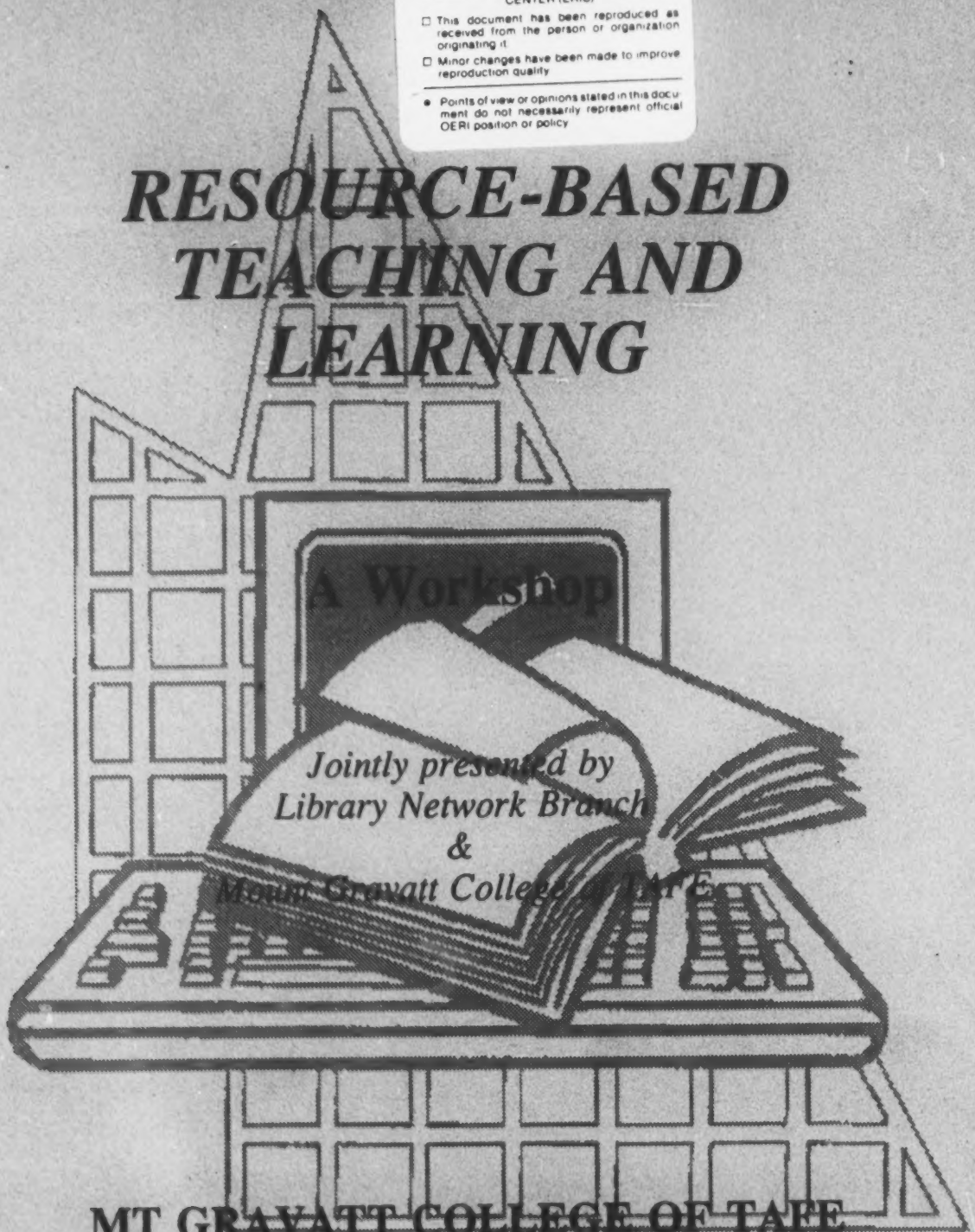
RESOURCE-BASED TEACHING AND LEARNING



MT GRAVATT COLLEGE OF TAFE

NOVEMBER 1992

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AIM & OBJECTIVES

The **aim** of this program is to introduce a selection of resource-based teaching and learning strategies as a method for flexible delivery of curriculum.

At the end of the program participants will be aware of:

- environmental factors impacting on the TAFE curriculum and its delivery
- how resource-based teaching and learning can be used as a delivery method
- how information resources are used
- information retrieval strategies that can be included in learning activities
- planning strategies for the use of this delivery method
- support available through the college library.

PROGRAM

1. The TAFE environment
2. Definition and examples of resource-based teaching and learning
3. The concepts of information literacy
4. Information retrieval and research skills
5. Basic concepts of resource-based teaching and learning
6. Putting resource-based teaching and learning into practice
7. Interchange of ideas and thoughts

PRESENTERS

Robert Burnheim
Learning Strategies Support Librarian, Library Network Branch

Previous to his appointment to TAFE, Robert worked with the Department of Education in the Division of Curriculum Services. He has presented many workshops on the effective use of information resources, the development of information literacy skills and the services required to support the effective delivery of the competency-based training curriculum.

Anne Floyd
Senior College Librarian, Mt Gravatt College of TAFE

Previous to this position, Anne acted as User Services Librarian at Library Network Branch and prior to that was manager of Resource Services at Redland Community College. In 1991 she was awarded a QEVET Scholarship for travel to Europe to research the implications of competency-based training for library services.

During the first part of 1992, Robert and Anne conducted a state-wide investigation of the library and resource services required to support the delivery of a competency-based training curriculum. The report of this investigation is available through all TAFE college libraries. Information gathered through that investigation will be featured during this workshop.

Robert and Anne both hold qualifications in teaching and librarianship.

MORE INFORMATION?

If further information is required, Robert can be contacted on 07 840 4727 while Anne is available on 07 343 5988 extn 240.

WHAT IS RESOURCE-BASED TEACHING AND LEARNING?

We define resource-based teaching and learning as:

> *Structured learning activities where the student has primary responsibility for the information transfer process.*

Resource-based teaching and learning requires:

- significant planning and preparation
- students to accept greater responsibility for the quality and depth of their learning
- teachers to provide motivation, management, guidance, remedial assistance, reference points and pastoral support

Resource-based teaching and learning represents a move away from the teacher providing nearly all information to the student through lessons, to the teacher providing the student with opportunities and activities for the student to locate, retrieve, evaluate and use information.

Resource-based teaching and learning is not dependent on the teacher's presence at the site of learning. While resource-based teaching and learning is independent of the teacher's physical presence, it is highly dependent on the quality of planning done by the teacher.

When considering the use of resource-based teaching and learning, we need to acknowledge that:

- Not all students learn equally well through the same strategies.
- Certain methods are more applicable to particular situations.
- No single method is superior, particularly in terms of student performance, to another in all situations

Prent M. 1988, *Curriculum Development and Design*, Sydney, Allen and Unwin. p.126

Resource-based teaching and learning provides opportunities for learning activities to be structured so that they provide high reality and relevance to the actual situation. While featuring lower levels of direct teacher participation, they encourage higher than average learner involvement in the teaching process.

SOME THOUGHTS ABOUT RESOURCE-BASED TEACHING AND LEARNING

The following statements address some of the why, where and how questions that arise when considering the idea of resource-based teaching and learning. From the library perspective, the use of this teaching delivery style will help students to become aware of the wide range of information resources available to them. Resource-based teaching and learning, when used as the delivery mechanism, will build the information literacy skills of the students and provide ample opportunities for them to practise and master skills.

We need to develop and enhance the individual's potential to optimise learning by developing the knowledge, skills and attitudes that are essential for managing learning.

We need to provide students with the skills to become informed decision makers, effective communicators and life-long learners.

As educators, we must move away from text books, passive listening and treating the teacher as the fount of all knowledge, master of rote learning and large class instruction.

Resource-based teaching and learning has a part to play because it:

- allows for different starting points
- allows for a variety of learning outcomes
- allows for a variety of experiences
- allows each student to process learning in a variety of ways
- encourages student decision-making and choice-taking
- maximises opportunities for exceptional students
- allows the use of a variety of evaluation procedures.

Most competency-based training curriculums suggest that delivery methods used need to consider:

- a focus on demonstration of achievement
- differing rates of learning and achievement
- nonaligned movement through the course
- movement away from the need to engage in a full course of instruction

The use of resource-based teaching and learning delivery techniques will help teachers to work to these suggestions.

FLEXIBLE DELIVERY

Flexible delivery concerns the adoption of learning approaches which do not rely solely on traditional, classroom based, face-to-face teaching.

Flexible delivery proposes the delivery of instruction away from the institution to utilise the facilities of business and industry. Included are:

- work-based training - i.e. training directed by the demands of work expectations
- action learning - i.e. training under real conditions. An example may be teaching carpentry skills by building an actual dwelling on-site rather than training by building models or samples.
- enterprise training. - i.e. training to the specific need and conditions of the business/industry. This training may not always lead to the awarding of a credential.

The adoption of flexible delivery approaches within the classroom may see the following methods used:

- self-paced learning
- video, audio and computer-based learning
- learning centres
- resource-based teaching
- self-managed work groups.

Where individual study is adopted, this may occur off-campus, at home, in the workplace or at an open learning centre. Featured will be:

- resource-based external study
- telecommunication-based delivery
- telecommunication-based support.

IMPACT OF COMPETENCY-BASED TRAINING CURRICULUM ON THE TEACHING PROCESS

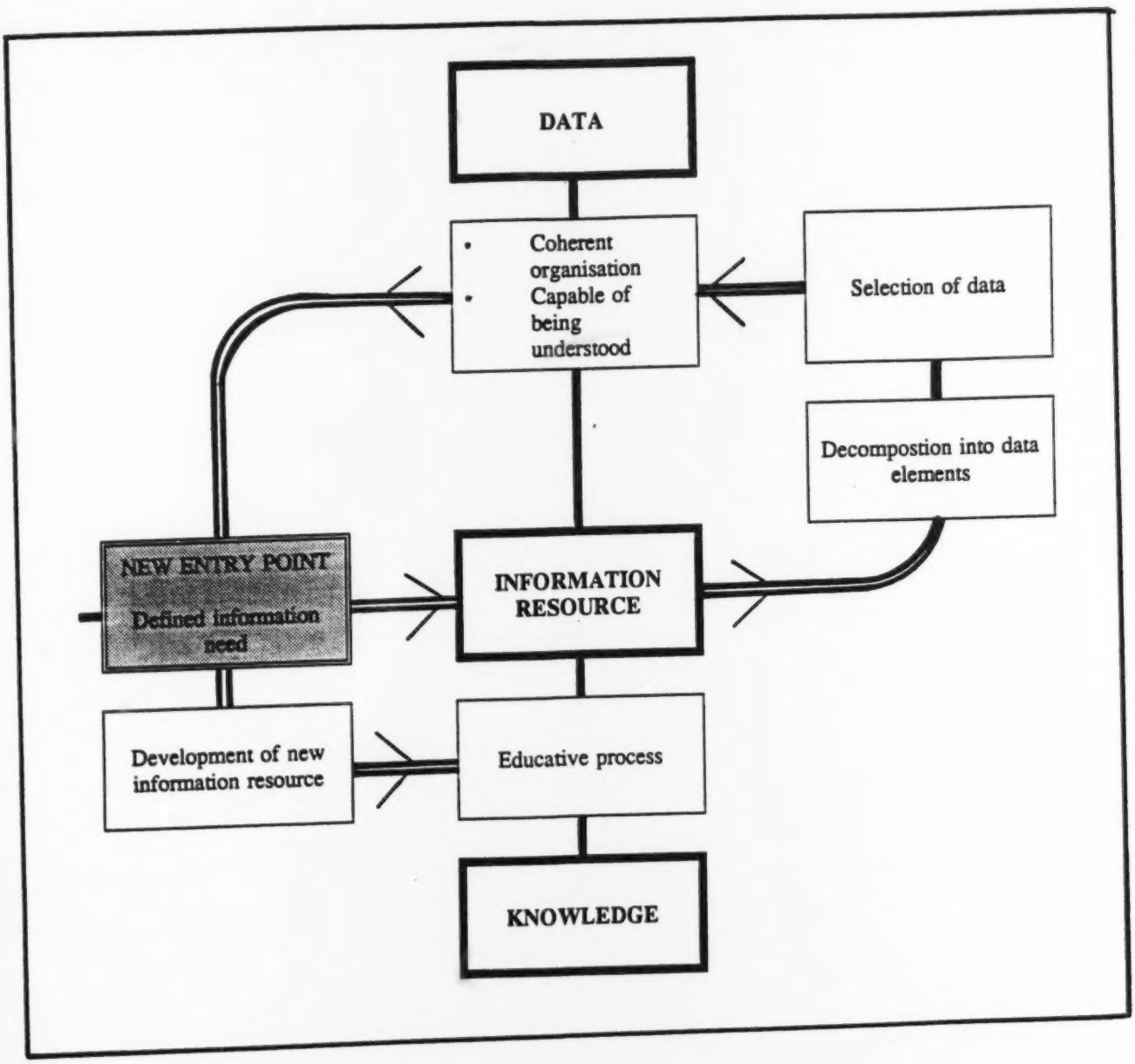
- Student centred education
- Individualised instruction
- Don't hold back the more able student
- Extension work
- Teacher as the manager, facilitator, motivator
- Change from whole class teaching to individualised instruction
- Versatility in and breadth of teaching style(s)
- Range of delivery techniques
- Use of more resources
- Teaching resources become learning resources

COMPETENCIES TO BE ACHIEVED

In these, competency-based times, what competencies does the student need to have to be a competent user of information. Based on the work of Michael Marland (1981), the following competencies should be achieved.

The student is able to:

- formulate and analyse the information need
- identify and appraise the worth of likely sources
- trace and locate individual resources
- examine, select and reject individual resources in the light of the information need
- interrogate resources to isolate required information
- record and store information
- interpret, analyse, synthesise and evaluate the information gathered
- present and communicate findings
- evaluate the conduct of the process.


DATA
Coherent organisation
Capable of being understood
Selection of data
Decompostion into data elements
NEW ENTRY POINT
Defined information need
INFORMATION RESOURCE
Development of new information resource
Educative process
KNOWLEDGE

INFORMATION RETRIEVAL AND RESEARCH SKILLS

Retrieving information and turning it into relevant and useful knowledge is a complex task which requires three basic competencies.

1. ORIENTATION

Students need to have knowledge of:

- where materials are located (main library, campus library, satellite collections)
- library layout
- borrowing entitlements
- what materials are available (books, journals, newspapers, video tapes, audio tapes, slides, maps, charts, pamphlets, indexes, CD-ROM's, computer databases, models, hardware)
- what facilities are offered (circulation, quiet reading rooms, private study areas, group work areas, audiovisual hardware for viewing, personal computers, typewriters, inter-library loans, on-line searching)
- what location tools are available (OPAC [*On-Line Public Access Catalogue*], card catalogues for non-catalogued materials, indexes, [either hard copy, on-line or CD-ROM]) and Reference Desk Services.

2. INFORMATION RETRIEVAL

Information seekers need to be competent and confident users of the following:

- OPAC (On-line Public Access Catalogue)
- Card catalogues
- Classification systems used in libraries (LC and Dewey)
- CD-ROM

Information retrieval cont.

- Microfiche (TAFE Union Catalogue, QUT Catalogue)
- Computer databases
- Journal indexes (print, CD-ROM, or on-line for the more sophisticated user)
- Table of content and index of book
- Using video presenters, tape recorders, film projectors, slide and filmstrip projectors
- Photocopiers

3. RESEARCH SKILLS

Students need to acquire the ability to:

- read
  - for speed
  - for different purposes (ranging from identifying the usefulness of material to complex understanding of concepts)
  - effectively read diagrams, graphs, statistical tables (visual literacy)
- establish **goals** and purpose of research
- manage **time** to complete the task for the required deadline
- **transfer** the research skill previously acquired to new situations
- locate suitable materials
- **make decisions** about what material is relevant to their needs and what is peripheral to their immediate needs
- note-take from different material mediums (including active listening)
- sort and **organise** material into a logical sequence
- **communicate** their knowledge and information to others (either by oral or written communication, formally or informally)
- footnote and prepare bibliographies to accompany written presentation of material
- present tasks in a highly effective format (may require word processing skills)

PLANNING FOR RESOURCE-BASED TEACHING AND LEARNING

TEACHER		STUDENT	
Planning	Planner	Individual	***Motivation***
• which delivery method			• why this material
• which methodology (individuals, pairs, groups)			• why this method
• identification of past skills and experiences (RPL)			***Development of Autonomous Learner***
• prepare standards/criteria	Facilitator	Responsible	• confidence
• mode of presentation - oral, written			• risk taker
• prepare unit prepare timeline			• effective communicator
			• self motivated
			• time manager
Evaluate and Revise	Supporter	Decision-Maker	•goal orientated
• methodology of delivery			***Responsibility and Control for own learning and behaviour***
Teams			• decision making
• liaise with library staff - pre-plan unit - ensure adequate resources - arrange team teaching of information retrieval and research skills	Team Member		• problem solving
			• individual differences
			• individual learning styles
• liaise with other college staff - resource teachers - literacy teachers - counsellors		Team Member	***Self Managed Teams***
			• develop team skill
• liaise with other teachers			• learn from peers

OUTCOME - COMPETENCE

Skill, Knowledge, Understanding

TOP LEVEL STRUCTURE

Top level structure was developed by Brendon Bartlett. This strategy involves the identification of the structures that an author has used in constructing a text. By using this strategy, learners can access the author's textual structure and identify the intent of the work thus enabling information decomposition to occur. By retaining the structure, or adhering to a structural design, it becomes easy to organise information data coherently, thus creating information resources. Top level structure analysis can be used with most print and non-print resources.

Decomposition

All information resources have structure. If they did not, they would have little use. They would be incapable of being understood, they would lack coherency. If the information user is able to identify the structure decomposition of the information resource becomes relatively easy.

The structures that are most commonly used would appear to be:

- listing
- problem/solution
- question/answer
- cause/effect
- comparisons.

Each of these structures can be identified through a variety of keys.

Examples are:

<u>Listing</u>

Look for phrases such as:

- There are several types of . . .
- Some features of this model are . . .
- First we observed . . . then . . .
- The sequence of events was

<u>Problem/Solution and Question/Answer</u>

These phrases are often used:

- The solution to . . . was . . .
- . . . solved . . .
- The trouble was caused by . . .
- We need to . . . so that

Cause/Effect

Look for

- . . . may be due to . . .
- If . . . then . . .
- As a result of . . . the following happened . . .

Comparison

Phrases to be on the alert for are:

- in contrast
- on the other hand
- similar to
- compared with.

Recomposition

Just as all prepared information resources have structure, so too should the information resources developed by the student. The same structures, as described above, can be used by students to:

- analyse the intent of a question and thereby establish the information need
- organise the collection of data, and
- provide a logical shape to the information resource being developed.

There are clues that the student should be alert for that will indicate the structure to be developed. The following phrases and question stems will be commonly found/.

Listing

- What are
- Show the steps
- Describe in order

Problem/Solution and Question/Answer

- Analyse
- Discuss
- If

Cause/Effect

- What was the outcome
- Outline the causes of
- What effect

Comparisons

- Discuss the advantages and disadvantages of
- Show the difference
- How effective

LISTING INFORMATION RETRIEVAL

Look for these words in the text: ☐ all ☐ also ☐ as time passed ☐ characteristics ☐ first ... then ☐ first ☐ for example ☐ for instance ☐ later ☐ lots of ☐ many parts ☐ next ☐ sequence ☐ several ☐ some features ☐ such as ☐ to begin with ☐ types

Look for these words in questions and assignment topics: ☐ Arrange ☐ Describe in order ☐ Detail ☐ List ☐ What are ☐ Show the steps

TOPIC:

CONCEPT:	**CONCEPT:**
IDEAS/POINTS: ☛ ☛ ☛ ☛	**IDEAS/POINTS:** ☛ ☛ ☛ ☛

CONCEPT:	**CONCEPT:**
IDEAS/POINTS: ☛ ☛ ☛ ☛	**IDEAS/POINTS:** ☛ ☛ ☛ ☛

PROBLEM/SOLUTION and QUESTION/ANSWER INFORMATION RETRIEVAL

Look for these words in the text: ☐ adaptions ☐ because ☐ difficulties ☐ need to prevent ☐ option of ☐ problem ☐ question/answer ☐ result ☐ so ☐ solution ☐ solved ☐ trouble

Look for these words in questions and assignment topics: ☐ Analyse ☐ Discuss ☐ If

PROBLEM or QUESTION	SOLUTION or ANSWER

COMPARATIVE INFORMATION RETRIEVAL

Look for these words in the text: ☐ although ☐ compared with ☐ despite ☐ different from ☐ even so ☐ however ☐ in contrast ☐ instead ☐ like ☐ meanwhile ☐ on the other hand ☐ similar to

Look for these words in questions and assignment topics: ☐ Access the importance/value ☐ Advantages/disadvantages ☐ Compare ☐ Evaluate ☐ How effective ☐ Show the difference ☐ To what extent/degree ☐ What similarities ☐ What contrast ☐ What difference is there

This chart has been set up for three way comparisons. Where more than three cases are being examined, extra sheets should be used.

COMPARISON POINT	CASE 1:	CASE 2:	CASE 3:

CAUSE/EFFECT INFORMATION RETRIEVAL

Look for these words in the text: ☐ although ☐ and may be due to ☐ as ☐ at first ☐ because ☐ before/after ☐ cause ☐ effect ☐ eventually ☐ finally ☐ if...then ☐ result ☐ since ☐ so ☐ when

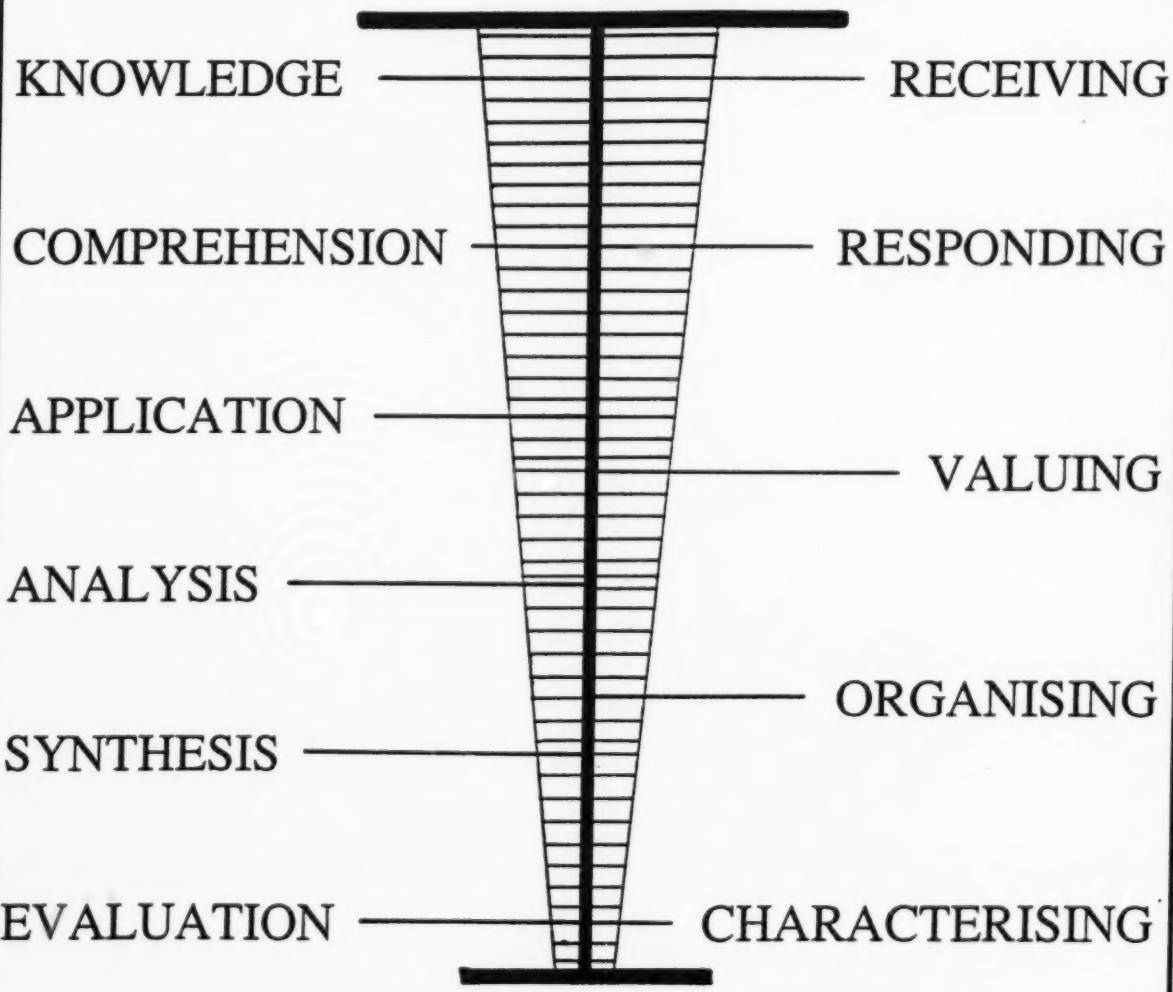
Look for these words in questions and assignment topics: ☐ Analyse ☐ Discuss ☐ Evaluate ☐ Explain ☐ Explain ☐ Give reasons ☐ Give an account ☐ Outline the causes of ☐ Suggest ☐ What was the outcome ☐ What effect ☐ What event occurred ... which cause ... led to

CAUSE	EFFECT/S

Key Competency Strand / Performance Level	Performance Level 1	Performance Level 2	Performance Level 3
Collecting, analysing and organising ideas and information	Access and record pieces of information from a single source	Access, select and organise information from more than one source	Access, evaluate and organise information from a range of sources
Expressing ideas and information	Express routine ideas and information in familiar situations	Express complex ideas and information in familiar situations	Express complex ideas and information in unpredictable or unfamiliar situatons
Planning and organising activities	Plan and organise a routine activity under supervision	With guidance, plan and organise a complex activity	Initiate, perform, and evaluate a complex activity independently
Working with others and in teams	Work with others to undertake familiar activities	Help formulate and achieve group goals	Collaborate with others to complete complex activities

BLOOM & KRATHWOHL TAXONOMIES

COGNITIVE . . . . . AFFECTIVE



APPLYING BLOOM'S TAXONOMY OF COGNITIVE PROCESSES

(From Achieving Excellence, Ministry of Education and Training, Victoria 1991)

THINKING PROCESS	*USEFUL VERBS*	*SAMPLE QUESTION STEMS*	*SOME POTENTIAL ACTIVITIES AND PRODUCTS*
KNOWLEDGE	tell list describe relate locate write find state name	What happened after ...? How many ...? Who was it that ...? Can you name the ...? Describe what happened at ...? Who spoke to ...? Can you tell why ...? Find the meaning of ...? What is ...? Which is true of false ...?	Make a list of the main events. Make a timeline of the events. Make a facts chart. Write a list of any pieces of information you can remember. List all the (?) in the text. Make a chart showing.
COMPREHENSION	explain interpret outline discuss distinguish predict restate translate compare describe	Write in your own words ...? Write a brief outline ...? What do you think could of happened next ...? Who do you think ...? What was the main idea ...? Who was the key character ...? Can you distinguish between ...? What differences exist between ...? Can you provide an example of what you mean ...? Can you provide a definition for ...?	Draw pictures to show an event. Illustrate what you think the main idea was. Make a cartoon strip showing the sequence of events. retell in your own words. Illustrate some aspect of the event/process. Write a summary report. Prepare a flow chart to illustrate the sequence of events. Develop a colour-coded diagram of the process.
APPLICATION	solve show use illustrate calculate construct complete examine classify	Do you know of another instance where ...? Could this have happened in ...? Can you group by characteristics such as ...? What factors would change if ...? Can you apply the method used to some experience of your own ...? What questions would you ask of ...?	Construct a model to demonstrate how it would work. Make up a scrapbook about the area(s) of study. Take a collection of photographs to illustrate/demonstrate a particular point. Make up a puzzle game using ideas from the study area. Design a market strategy for your product using a known strategy as a model. Design a mural using the same materials. Write a textbook about ... for others.

THINKING PROCESS	*USEFUL VERBS*	*SAMPLE QUESTION STEMS*	*SOME POTENTIAL ACTIVITIES AND PRODUCTS*
Application cont.		From the information given, can you develop a set of instructions about ...? Would this information be useful if you had a ...?	
ANALYSIS	analyse distinguish examine compare contrast investigate categorise identify explain separate advertise	Which events could not have happened? If ... happened, what might the ending have been? How was this similar to ...? What was the underlying theme of ...? What do you see as other possible outcomes? Why did ... changes occur? Can you compare your ... with that presented in ...? Can you explain what must have happened when ...? How is ... similar to ...? What are some of the problems of ...? Can you distinguish between ...? What were some of the motives behind ...? What was the turning point? What was the problem with ...?	Design a questionnaire to gather information. Write a commercial to sell a new product. Conduct an investigation to produce information to support a view. Make a flow chart highlighting critical stages. Construct a graph to illustrate selected information. Develop a jigsaw puzzle based on the process. Show relationships using a branch (i.e. family tree) diagram. Put on a play about the study area. Write a biography of the person studied. Prepare a report about the area of study.
SYNTHESIS	create invent compose predict plan construct design imagine improve	Can you design a ... to ...? Can you see a possible solution to ...? If you had access to all resources, how would you deal with ...? Why don't you devise your own way to ...? What would happen if ...? How many ways can you ...?	Invent a machine to do a specific task. Design a building to house your study/work. Create a new product. Give it a name and plan a marketing campaign. Write about your feelings in relation to ... Write a TV show, play, role play about ... Design a record, book or magazine cover for ... Make up a new language code and write material using it. Sell an idea.

THINKING PROCESS	*USEFUL VERBS*	*SAMPLE QUESTION STEMS*	*SOME POTENTIAL ACTIVITIES AND PRODUCTS*
Synthesis cont.	propose devise formulate	Can you create new and unusual uses for ...? Can you develop a proposal which would ...?	Devise a way to ...
EVALUATION	judge select choose decide justify debate verify argue recommend assess discuss rate prioritise determine	Is there a better solution to ...? Judge the value of ... Can you defend your position about ...? Do you think ... is a good or bad thing? How would you have handled ...? What changes to ... would you recommend? Do you believe ...? Are you a ... person? How would you feel if ...? How effective are ...? What do you think about ...?	Prepare a list of criteria to judge a ... show. Indicate priority and ratings. Conduct a debate about an area of special interest. Make a booklet about five rules, laws or principles that you see as important. Convince others. Form a panel to discuss views, e.g. "Drum brakes are more effective than disc." Write a letter to ... advising on changes needed at .... to ... Write a half-yearly report. prepare a case to present your view about ...

LIBRARY PREPARATION CHECKLIST

This list, originally developed at Logan College of TAFE, provides a checklist to be used when planning assignments.

- ❑ Set realistic goals by checking the library first and locating the quantity of resources available on your particular topic. Your librarian can advise on resources for assignment topics

- ❑ Consider potential modes of presentation when checking available resource; for example, audio-visual productions.

- ❑ Be wary of setting a topic that is too recent as written materials may be limited.

- ❑ Beware of subjects that are too specialised as information may be limited and specific materials may not be readily available.

- ❑ Freeze resources which will be in high demand by your students before you give them their assignment topics.

- ❑ Offer a range of questions on any specific topic.

- ❑ Arrange a session of reader education for your class with library staff. This session should include information search skills and resources that may be useful in working to the assignment topic.